

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

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Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte ANDREW WELCH  
and STEPHAN SCHAEM

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Appeal No. 2001-0177  
Application 08/731,122<sup>1</sup>

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ON BRIEF

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Before JERRY SMITH, BARRETT, and DIXON, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-3, 5-7, 9, and 10.

We reverse.

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<sup>1</sup> Application for patent filed October 9, 1996, entitled "Method and Apparatus for Determining the Location of a Reflective Object Within a Video Field," which is a continuation of Application 08/303,063, filed September 8, 1994, now abandoned.

BACKGROUND

The invention relates to a method and system for detecting the precise location of a reflective object in a video field wherein the determined location is subsequently utilized to generate a graphic to be added to a background video scene utilizing conventional compositing techniques.

Claim 5 is reproduced below.

5. A method for creating a composite video signal having a background portion and a foreground portion, said foreground portion representing a foreground scene containing a moving reflective object having a predetermined color and size, said foreground portion defined by a field of video information provided by a video source having red, blue and green components, said red, blue and green components having been converted to a digital representation, said method comprising the steps of:

a) comparing the component of a said video signal corresponding to the color of said reflective object to a predefined color generating a first signal representing the results of said comparison;

b) computing the size and shape of an object within a video field, by scanning in left, right, top, and bottom directions for pixels having a predefined color;

c) comparing the size and shape of said pixels having said predefined color within said video field to a predefined size and shape and generating a second signal representing the results of the comparison;

d) specifying the relative positions of said reflective object within said video field when first and second signals indicate that the pixels match the predefined color, size and shape; and

e) supplying the specified relative position to a graphics computer which generates an image signal to be added to said background portion in real time for displaying a graphical image at the specified relative position on a

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display device such that the graphical image tracks the movement of said reflective object as it moves in said video field.

Independent claim 1 is the system equivalent of method claim 5.

The examiner relies on the following references:

Lemelson et al. (Lemelson)	4,653,109	March 24, 1987
Brooke	5,261,030	November 9, 1993

Claims 1-3, 5-7, 9, and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lemelson and Brooke. The examiner finds that Lemelson teaches the subject matter of independent claims 1 and 5 except for adding an image signal to a background portion, which the examiner concludes would have been obvious over Brooke.

We refer to the final rejection (Paper No. 17) and the examiner's answer (Paper No. 23) (pages referred to as "EA\_\_") for a statement of the examiner's rejection, and to the brief (Paper No. 21) (pages referred to as "Br\_\_") and reply brief (Paper No. 24) (pages referred to as "RBr\_\_") for a statement of appellants' arguments thereagainst.

#### OPINION

Appellants argue that Lemelson is not concerned with real time tracking of moving objects because Lemelson compares a scan to the entire video field and a subsequent re-scan of the entire video field at some later time for differences, which differences are analyzed to determine whether something has changed from one

scan to the re-scan (Br6-7). The examiner contends that appellants' "claims do not recite a real time tracking of moving objects" (EA6), but "simply recite 'adding graphical image signals to background portion in real time'" (EA6-7). Appellants respond that the graphical image, which is added in real time, tracks the movement of the reflective object, which requires real time tracking of a moving object (RBr2-3).

We agree with appellants that "an image signal to be added to said background portion in real time for displaying a graphical image at the specified relative position on a display device such that the graphical image tracks the movement of said reflective object as it moves in said video field" requires real time tracking. However, assuming Lemelson performs tracking at the time of the re-scan, it seems that this could be considered to be in real time, i.e., the re-scan it is at the present time (depending on the speed of the processing). Moreover, as the examiner notes (EA7), it appears that the comparison can be done with stored data instead of a previous scan (col. 9, lines 30-34), which could also be considered in real time (again depending on the speed of the processing). On the other hand, Lemelson does not disclose any need for real time processing. To be cautious, we will not decide the appeal on this basis.

Appellants argue that Lemelson does not contain any teaching with respect to matching of pixel patterns or, indeed, doing any

processing whatsoever at the pixel level (Br8). It is argued that to the extent Lemelson discusses, in what is, at best, general terms, elements of the present invention, such discussion is not coupled with any teaching or suggestion as to how such elements may be implemented, and does not teach the specifics of the invention of claims 1 and 5 (Br8-9).

The examiner states that "implementation of computing of the size and shape of an object is commonly well known in the art" (EA7) as evidenced by appellants' specification which discloses "[d]igital signal processor 37 reads and processes the RGB signals in buffer 35 to the detect the position in a field of video of an object having a user specified size, shape and color" (specification, p. 4, lines 15-17). The examiner further states that "the issue is not whether the Lemelson reference is valid and can be implemented but whether Appellant's claimed invention is patentable" (EA8).

The examiner errs in interpreting the statement in appellants' specification that the digital signal processor 37 detects the position of an object as somehow an admission that computing the size, shape, and position of an object in the claimed manner was well known, when, in fact, the statement describes the operation of appellants' invention described in the program at pages 5-7 of the specification. The examiner also errs in dismissing appellants' argument that Lemelson does not

teach how to implement the disclosed elements. "In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1471, 43 USPQ2d 1481, 1489 (Fed. Cir. 1997). We agree with appellants that Lemelson does not describe how the various comparisons and calculations are performed and, absent such a teaching, cannot make obvious the steps of representative claim 5. Lemelson does not describe working on pixels. While Lemelson contains general language about detecting changes which occur in time, such as a shift in position of an object or changes in shape or color (col. 1, lines 5-17), we find no teaching or suggestion of any of the steps of generating a signal representing the results of a color comparison, computing the size and shape of an object by scanning for pixels having a predefined color, generating a signal representing the results of a size and shape comparison, or determining the relative positions of the object within the video field when the pixels match the predefined color, size, and shape. We find no teaching that the system in Lemelson automatically detects the position of an object of predefined color, size, and shape by any method. The examiner refers to column 4, lines 62-66, to a teaching of obtaining coordinate locations (EA4). However, that portion of Lemelson is directed to the user positioning a cursor, crosshair

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image, or other form of image on the screen using a keyboard, joystick, or mouse to select a location, not to the system determining a position based on color, size, and shape of an object within the field of video information. We conclude that the examiner has failed to establish a prima facie case of obviousness as to elements/steps (a) to (d) of claims 1 and 5 and the "supplying the specified relative position to a graphics computer" in element/step (e). Accordingly, the rejection of claims 1-3, 5-7, 9, and 10 is reversed.

REVERSED

JERRY SMITH	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
LEE E. BARRETT	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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	)	
JOSEPH L. DIXON	)	
Administrative Patent Judge	)	

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